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ABSTRACT

Schemata is one example of a cognitive construct used extensively by social and personality psychologists to explain some of the biases that emerge when people process information about themselves and others. Recently gender has also been seen as a cognitive schema. Sex and gender schema processing were examined in 40 male and 40 female college students. After being classified as sex-typed or balanced individuals, students were asked to complete a timed digit symbol task, and to rate the stimulus person from a narrative description of an androgynous college student as a friend, and for psychological health and attractiveness. Lastly, students completed an adjective checklist describing the stimulus person. Students were tested by either a male or female experimenter according to either male or female stimuli conditions. Results showed no biasing effect for memory of the stimulus person, but significant evaluative effects between sex-typed and balanced individuals in terms of all three ratings. Performance deficits were found with sex-typed persons performing less well than balanced individuals when the constructor of the test was presented as a female. (JAC)

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GENDER SCHEMA PROCESSING EFFECTS ON PERFORMANCE, MEMORY AND EVALUATIVE TASKS

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Abstract

Sex and gender schema processing effects were examined in male and female college students, classified as sex-typed or balanced, and then presented with: a timed digit symbol task to complete; a narrative description of an androgynous college student to read and then rate as a friend, for psychological health, and attractiveness; and lastly, an Adjective Checklist to fill out to describe the stimulus person. Tasks were completed under either male or female stimulus instructions. Results showed no biasing effect for memory of the stimulus person, but significant evaluative effects were found between sex-typed and balanced individuals in terms of all three ratings, as well as performance deficits with sex-typed persons performing poorer than balanced individuals when the constructer of the test was presented as a female.

Gender Schema Processing Effects on Performance, Memory, and Evaluative Tasks

The notion that one's personal and characteristic "cognitive structures" influence the way one represents and organizes incoming information has long interested psychologists (e.g., Craik & Lockhart, 1972; Kelly, 1956). Schemata is one example of a cognitive construct used extensively by social and personality psychologists to explain some of the biases that emerge when people process information about themselves and others (e.g., Canter & Mischel, 1977; Lemon & Warren, 1974; Mills, 1981; Shrauger & Patterson, 1974). One of the richest, most pervasive, highly organized. and efficient schemata is the self-schema (Markus, 1977; Rogers, Kuiper, & Kirker, 1977). Recently, gender has also been seen as a cognitive schema (Bem, 1979) with individual differences in the extent to which gender serves as an organizing structure for the processing of information. According to Bem, information related to gender is perceptually more salient and operative for the processing of information for sex-typed persons, presumably because their self-schema is organized along gender lines. Androgynous persons, on the other hand, are like "aschematics" in that the gender dichotomy of masculinity and femininity has little functional significance since it is not a dimension along which they define themselves.

Evidence relating to gender as a cognitive schema points to the effects of gender-based schematic processing on: the regulation of behavior (e.g., Montemayor, 1974; Tesser & Leone, 1977); memory and interference effects (Bem, 1981; Kail & Levine, 1976; Liben & Signorella, 1980; Mills, 1981; Mills & Tyrrell, 1980; Nadelman, 1974); the structuring of inferences and/or interpretation of situations and people, including significant biases (Deaux & Majors, 1977; Lippa, 1977); and evaluation of situations and persons (Bem, 1979; Duck, 1973; Mezydlo & Betz, 1980; Pursell & Benikiotes, 1978).

In all of the above, the implication is that sex-typed persons are at a disadvantage because of their gender schematic processing, and that androgynous

(or balanced) individuals are better able to accurately process information and more efficiently utilize that information for regulation of their own behavior and more objectively evaluate others. In addition, the androgynous "ideal" proposed by Bem (1979) leads to a more flexible, well-rounded, psychologically-healthy, and confident person (high self-esteem). Surely, one that would be well-liked by others. Recently, however, there have been problems with this ideal. For example, both sexes who exhibit nontraditional behavior are likely to be excluded interpersonally, negatively evaluated, and end up exhibiting more signs of psychological maladjustment than their more "traditional" sex-typed peers (e.g., Costrich, Feinstein, Kidder, Maracel, & Pascale, 1975; Jones, Chernovetz, & Hansson, 1978; Worell, 1978).

At the present time the relevant factors influencing these effects is either unclear or uninvestigated. For example, are androgynous persons negatively evaluated and excluded equally by both sexes, as well as both sex-typed and androgynous others? Are sex-typed persons equally as influenced by gender-based schema processing for explicit information regarding others as they are in self-referent tasks? Will sex-typed persons be more biased in processing explicit information about others than balanced individuals? Will information about gender become differentially relevant to sex-typed vs. balanced individuals even when it is ostensibly irrelevant to the task and (by its effect on behavior) counter-productive. Finally, are there gender effects that will interact with the individual differences in gender-schema?

The above questions will be addressed in the present study. It is hypothesized that androgynous persons will be rated more highly as a friend, in terms of psychological health, and attractiveness by androgynous subjects than sex-typed ones. Further, it is expected that both males and females will evaluate an androgynous person of the same sex less favorably than an opposite sex androgynous stimulus person. The biasing effect found for sex-typed persons in self-referent tasks is not anticipated when such subjects are receiving explicit information about others;

rather, differences will be limited to the evaluative element noted above. Finally, because the effects of sex-typing in regard to processing information about others is more influential in the evaluative element than in straight encoding and memory of information, it is expected that sex-typed individuals will perform less well when a task they are performing is linked to gender (in this case, the task constructor and "expert" is either a male or female). Specifically, sex-typed persons of both sex will exhibit the typical bias of "expert" as male and perform better in the "male psychologist" condition than in the "Female psychologist" condition; whereas, balanced subjects should show little if any bias.

Subjects. 40 male and 40 female introductory psychology students participated. All subjects completed the Adjective Checklist (ACL) in class and were classified as sex-typed or balanced using a Sex Stereotype Index (Williams & Best, 1977) weighting for each item checked. Twenty subjects from each of the sextyping groups and for each sex were recruited and volunteered for the experimental part of the study (8 weeks later).

Procedure. Subjects were tested in small groups by either a male or female experimenter and according to experimental condition (either male or female stimulus). In the first phase of the study, subjects received a timed Digit Symbol Task with instructions that stated either a male or female psychologist constructed the task and based on his/her "theory" determined the amount of time needed to complete the task (the time allowed was insufficient for anyone to finish).

In the second phase, subjects were presented with a narrative description of either a male or female college student. An equal number of masculine, feminine, and neutral personality characteristics (taken from the ACL and equated for degree of sextyping and social desirability) were used to describe the stimulus person. After reading the description, subjects rated the person on how much they would like her/him as a friend, their psychological health, and attractiveness (1-7 scale). Finally, subjects were asked to check off on an ACL all adjectives that described the person in the story.

Design. A 2 x 2 x 2 between subjects factorial design was used. Independent variables were sex of subject, sex-typing of subject, and sex of stimulus person.

Analysis. A separate analysis of variance was computed for: total of items correctly copied on the Digit Symbol Task, overall sex-stereotype score (SSI) for ACL description of stimulus person, overall favorability of description, mean friend, psychological health, and attractiveness ratings. In addition, the mean SSI and favorability scores for adjectives used in the story versus those adjectives used by subjects in their descriptions, but not in the original story (intrusions), were broken down into masculine, feminine, and neutral adjectives and analyzed using a 3-between, 1-within (type of word) analysis of variance.

Results. The manipulation check on whether subjects noticed the sex of the stimulus person showed that 100% of the subjects accurately reported the sex of the person.

Table 1 presents mean scores for all dependent variables. No significant differences were found for overall sex stereotype index or favorability scores, and no group's SSI score differed from the actual SSI for stimulus characteristics actually used in the story (M = 511.50). Analyses by type of word for words used in the original study versus intrusions revealed only one significant finding -- SSI scores differed across type of word, both for adjectives found in the original story, as well intrusions. This is not surprising since the SSI scores are meant to differentiate between the three types of words.

For friend and attractiveness ratings, a main effect for sextyping was found ($F_{1,79} = 8.76$, $p < .005$; $F_{1,79} = 8.58$, $p < .005$) with sextyped subjects of both sexes rating the stimulus persons (SP) lower than balanced subjects. A significant main effect for sextyping ($F_{1,79} = 11.30$, $p < .005$), as well as a sex of subject x sex of stimulus person interaction ($F_{1,79} = 7.68$, $p < .01$) for psychological health ratings were found. Sextyped subjects rated the psychological health of all subjects lower than balanced subjects. Post-hoc tests ($p < .05$) on the three-way interaction showed that: (1) when rating same-sex SP, sextyped subjects gave

lower ratings than balanced subjects; (2) when rating opposite-sex SP, no differences were found between sextyped and balanced subjects; (3) sextyped male subjects rated female SP higher than male SP with no differences for balanced males (who overall gave higher ratings); (4) sextyped and balanced females rated male SP higher than female SP, although balanced females overall gave higher ratings; and (5) highest overall ratings were for balanced males with male SP and balanced females with female SP.

Finally, on the Digit Symbol Task, females did significantly better than males, $F_{1,79} = 8.59$, $p < .005$, and overall subjects performed better for the male stimulus "expert" than for the female, $F_{1,79} = 4.11$, $p < .05$). Pre-planned comparisons, however, showed no differences between groups with a female stimulus. For groups with a male stimulus, sextyped females performed significantly better than the other three groups combined ($t_{38} = 3.45$, $p < .01$), while balanced males had significantly lower scores than anyone ($t_{38} = 3.87$, $p < .01$). Sextyped males and balanced females performed equally as well for the male stimulus.

Discussion. Most hypotheses were supported. As expected, no biasing effect was found for overall SSI or favorability scores. This finding is in agreement with prior evidence that information regarding self is processed differently from information about others (e.g., Rogers, Kuiper, & Kirker, 1977). The biasing effect of one's gender schema appears to be operative when information about others is lacking and/or ambiguous; when explicit information is provided (as in this study), subjects (both sex-typed and balanced) are quite capable of accurately describing another. Differences between sex-typed and balanced individuals appeared as expected in the evaluative element, with lower ratings for friend, psychological health, and attractiveness.

For psychological health, an interesting pattern emerged. When rating same-sex (androgynous) stimulus persons, sex-typed subjects gave lower ratings than balanced subjects; whereas, no differences emerged between subjects when ratings were for opposite-sex stimulus persons. The interesting implication of this is that all subjects (whether sex-typed or not) acknowledge the benefits of a more androgynous personality for the opposite sex. However, when it comes to one's own sex, only the balanced subjects rated the stimulus person as psychologically healthy.

Lastly, the superior Digit Symbol performance by all (but balanced males) subjects when the task was constructed by and related to a male psychologist's theory (as compared to a female psychologist) suggests that the traditional bias to see males as more "expert" than females is still alive and well -- more strongly in sextyped individuals. And, in fact, sextyped females were significantly more affected by this bias than sextyped males. It is possible to see this performance bias as a subtle kind of sabotage against women in positions of expertise or power. At the very least, it is unfortunate that sextyped people are less motivated to perform optimally when "working for a female," thus jeopardizing their own self-image in the eyes of the experimenter. It is possible (and quite likely) that this biasing effect is so deep as to be unconscious. Recent evidence with more "projective" types of tasks (e.g., release from proactive inhibition, reaction time, and clustering of free recall) suggests that a great deal of the gender schema processing effects operate automatically (cf. Mills, in press; Mills & Tyrrell, submitted for publication).

TABLE 1

Mean Scores for Overall SSI, Favorability, Ratings

For Friend, Psychological Health, and Attractiveness, and Digit Symbol Task

Sex of Subject	Male				Female			
Sextyping	Sextyped		Balanced		Sextyped		Balanced	
Stimulus person	Male	Female	Male	Female	Male	Female	Male	Female
Variable								
SSI	504.8	521.6	522.8	504.1	515.3	508.8	509.4	470.2
Favorability	576.8	565.8	566.2	590.3	565.0	572.4	554.8	570.3
Friend Rating	3.17	3.11	4.17	3.86	3.56	3.00	3.60	4.00
Psychological Health	2.83	3.67	4.33	4.00	3.67	3.00	3.60	4.27
Attractiveness	3.17	3.00	4.00	3.71	3.33	3.29	3.60	3.91
Digit Symbol Task	58.5	54.3	52.2	54.3	67.9	57.0	62.0	57.5

References

Bem, S. Theory and measurement of androgyny: A reply to the Pedhazur-Tetenbaum and Locksley-Colten critiques. Journal of Personality and Social Psychology, 1979, 37, 1047-1054.

Bem, S. L. Gender schema theory: A cognitive account of sex typing. Psychological Review, 1981, 88, 354-364.

Cantor, N., & Mischel, W. Traits as prototypes: Effects on recognition memory. Journal of Personality and Social Psychology, 1977, 35, 38-48.

Costrich, N., Feinstein, J., Kidder, L., Maracel, J., & Pascale, L. When stereotypes hurt: Three studies of penalties for sex-role reversals. Journal of Experimental Social Psychology, 1973, 11, 520-530.

Craik, F. I., & Lockhart, R. S. Levels of processing: A framework for memory research. Journal of Verbal Learning and Verbal Behavior, 1972, 11, 671-684.

Deaux, K., & Majors, B. Sex-related patterns in the unit of perception. Personality and Social Psychology Bulletin, 1977, 3, 297-300.

Duck, S. W. Similarity and perceived similarity of personal constructs as influences on friendship choice. British Journal of Social and Clinical Psychology, 1973, 12, 1-6.

Jones, W., Chernovetz, M., & Hansson, R. The enigma of androgyny: Differential implications for males and females? Journal of Consulting and Clinical Psychology, 1978, 46, 298-313.

Kail, R. V., & Levine, L. E. Encoding processes and sex-role preferences. Journal of Experimental Child Psychology, 1976, 21, 256-263.

Kelley, G. The psychology of personal constructs. New York: Norton, 1956.

Koblinsky, S. G., Cruse, D. F., & Sugawara, A. I. Sex role stereotypes and children's memory for story content. Child Development, 1978, 49, 452-458.

Kuiper, N. A., & Rogers, T. B. Encoding of personal information: Self-other differences. Journal of Personality and Social Psychology, 1979, 37, 2014-2024.

Lemon, N., & Warren, N. Salience, centrality, and self-relevance of traits in construing others. British Journal of Social and Clinical Psychology, 1974, 13, 119-124.

Liben, L. S., & Signorella, M. L. Gender related schemata and constructive memory in children. Child Development, 1980, 51, 11-18.

Lippa, R. Androgyny, sex typing, and the perception of masculinity-femininity in handwriting. Journal of Research in Personality, 1977, 11, 21-37.

Markus, H. Self-schemata and processing information about the self. Journal of Personality and Social Psychology, 1977, 35, 63-78.

Mezydlo, L., & Betz, N. Perception of ideal sex roles as a function of sex and feminist orientation. Journal of Counseling Psychology, 1980, 27, 282-285.

Mills, C. Sex-typing and self-schemata effects on memory and response latency. Journal of Personality and Social Psychology, in press.

Mills, C., & Tyrrell, D. Sex stereotypic encoding and release from proactive interference. Journal of Personality and Social Psychology, submitted for publication.

Montemayor, R. Children's performance in a game and their attraction to it as a function of sex-typed labels. Child Development, 1974, 45, 152-156.

Nadelman, L. Sex identity in American children: Memory, knowledge, and preference tests. Developmental Psychology, 1974, 10, 413-417.

Pursell, S., & Banikiotes, P. Androgyny and initial interpersonal attraction. Personality and Social Psychology Bulletin, 1978, 4, 235-239.

Rogers, T. B., Kuiper, N. A., & Kirker, W. S. Self-reference and the encoding of personal information. Journal of Personality and Social Psychology, 1977, 35, 677-688.

Shrauger, J., & Patterson, M. Self-evaluation and the selection of dimensions for evaluating others. Journal of Personality, 1974, 42, 569-585.

Tesser, A., & Leone, C. Cognitive schemas and thought as determinants of attitude change. Journal of Experimental Social Psychology, 1977, 13, 340-356.

Williams, J. E., & Best, D. L. Sex stereotypes and trait favorability on the Adjective Checklist. Educational and Psychological Measurement, 1977, 37, 101-110.

Worrell, J. Sex roles and psychological well-being: Perspectives on methodology Journal of Consulting and Clinical Psychology, 1978, 46, 777-791.